

Pedestrian & Bicycle Roadway Design – Safe, Smart and Defendable

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Part I: 4 – Safe Design Features

- a) Bike Lanes in cities and villages
- b) 4 lane – 3 lane conversions “Road Diets”
- c) Mid-block pedestrian crossings
- d) Signing rural road/shoulders as bike routes

Part II: Liability and Case Law

Developed in
Response to:

**Michigan Pedestrian and Bicycle Safety
Action Plan 2009-2012**



Safety & Liability

Does pursuit of safety expose an agency to liability?

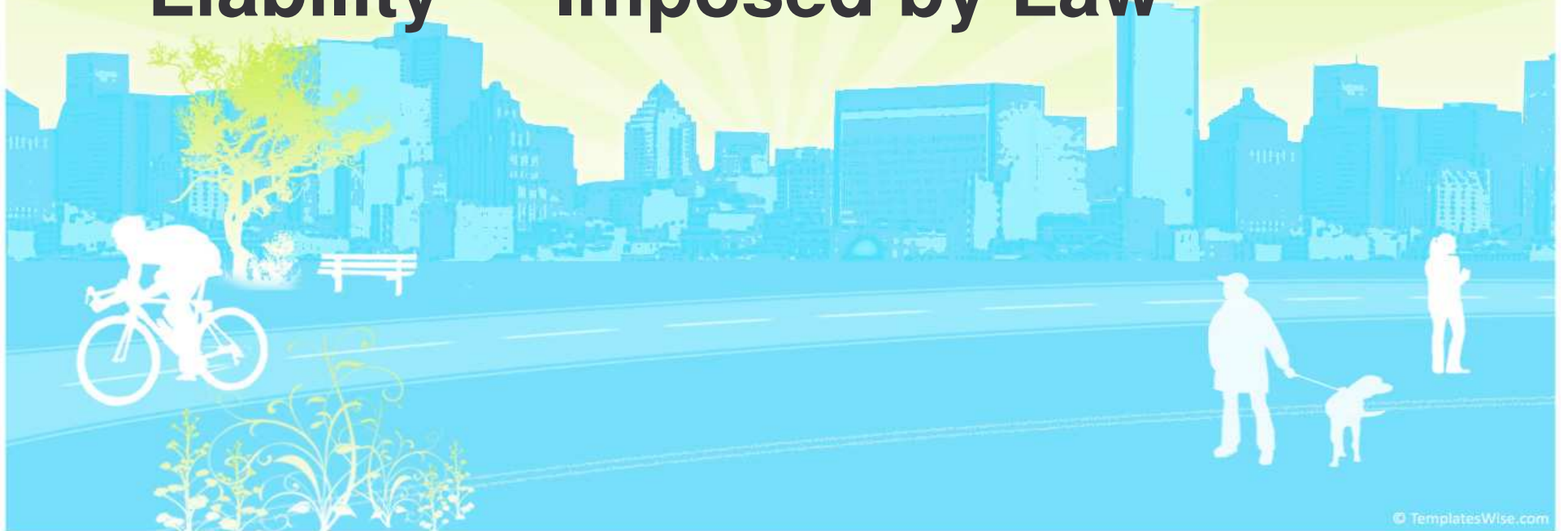
- **liability for action**
- **liability for inaction**
- **liability for trying something new**



Safety & Liability

Safety - Driven by Profession

Liability - Imposed by Law



A stylized, low-poly illustration of a city skyline with various skyscrapers and buildings in shades of blue and green, set against a light green background with diagonal rays.

Safety

Professional best practice:

- **AASHTO**
 - e.g. “The Green Book”
- **ITE / FHWA Guidelines and Research**
- **MDOT Design Manuals**
- **MMUTCD**
- **What has worked elsewhere**

What is a good pedestrian / bicycle design?

- put peds/bikes in logical travel paths
- put peds/bikes where they will be seen by motorists
- make clear to motorists where to expect peds/bikes
- calm traffic flow



Features that increase motorist expectation of bikes/peds:

- Conspicuous geometry
 - median refuge island
 - curb extensions
- Conspicuous markings/signs
 - crosswalk
 - bike lane
 - route designation



Four GOOD Design Ideas to Enhance Pedestrian and Bicycle Safety



1.

BIKE LANES



They're safer than sidewalk

Bicyclist Danger Index

- Major Streets w/o Bike Lanes 1.28
- Minor Streets w/o Bike Lanes 1.04*
- Streets with Bike Lanes 0.50
- Sidewalks 5.32

(* = shared roadway)

(1.0 = median)

Source: William Morita, U.W. – “Accident Rates for Various Bicycle Facilities” – based on 2,374 riders, 4.4 million miles



Bike Path vs. Bike Lanes



2.

4-to-3 Lane Conversions - “Road Diets”



***ALL
left turns
cross one
lane only***

Benefits of Road Diets for Pedestrians



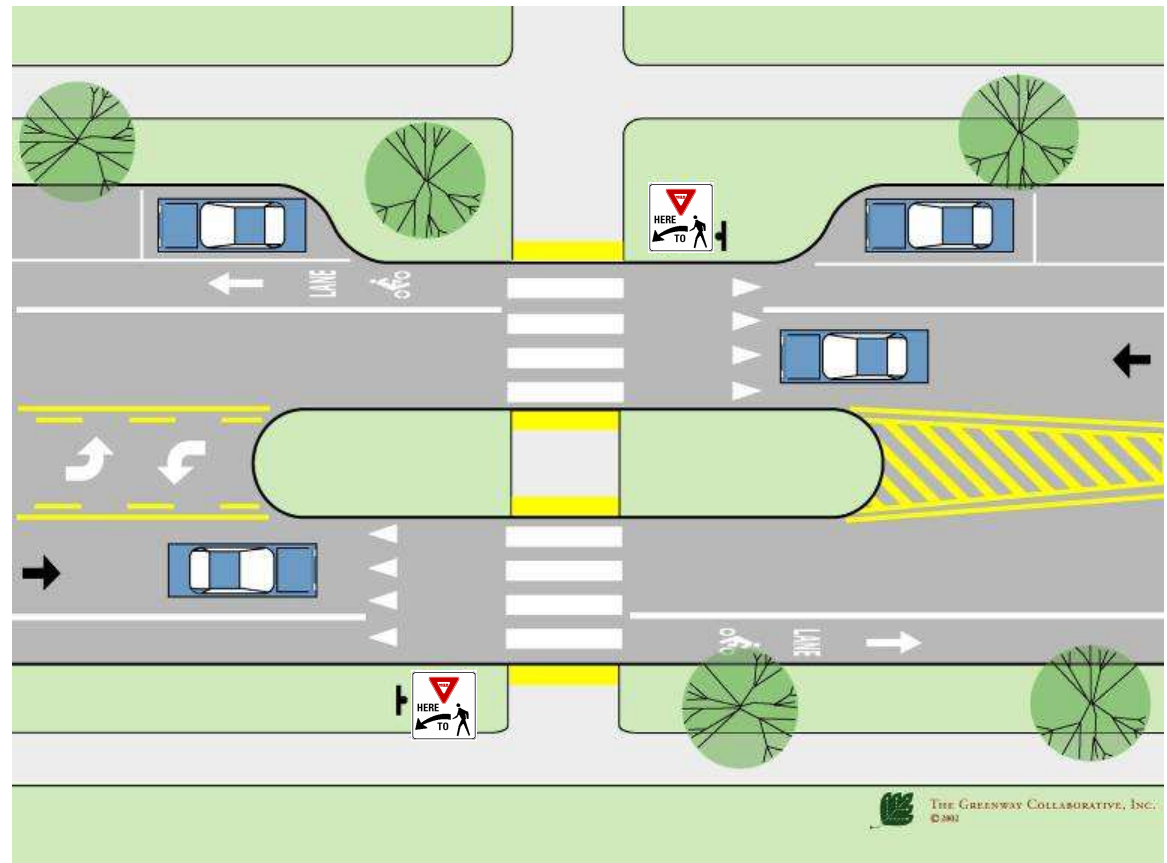
- Fewer travel lanes to cross
- With medians or crossing island: break a long crossing into 2 shorter crossings
- Reduce top end travel speeds

3.

MID-BLOCK CROSSINGS

With refuge island

- People Will Cross Anyway – Make it Safer
- No Turning Movements - No “right-hook”
- Crossing only One Direction of Travel at a Time



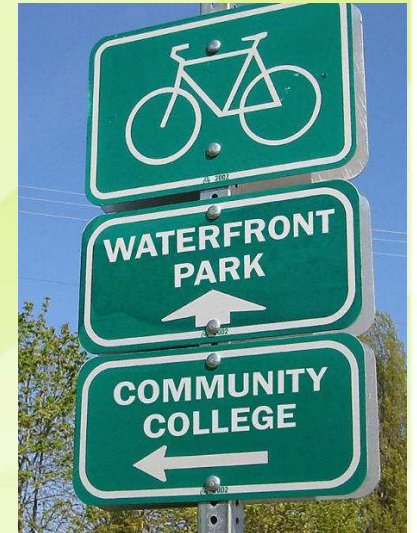
National statistics: refuge islands reduce pedestrian crashes by 40%

4.

Signing Rural Roads as Bike Routes



New York State
Bikeway



Shoulders as Bicycle Facilities

AASHTO: Some rural highways are used by touring bicyclist for intercity and recreational travel.

Paved shoulders can significantly improve the safety and convenience of bicyclists and motorists along such routes.



Bike Routes

- Wayfinding tool - not a facility
 - Guide to specific destinations
 - Use strategically for less obvious routes

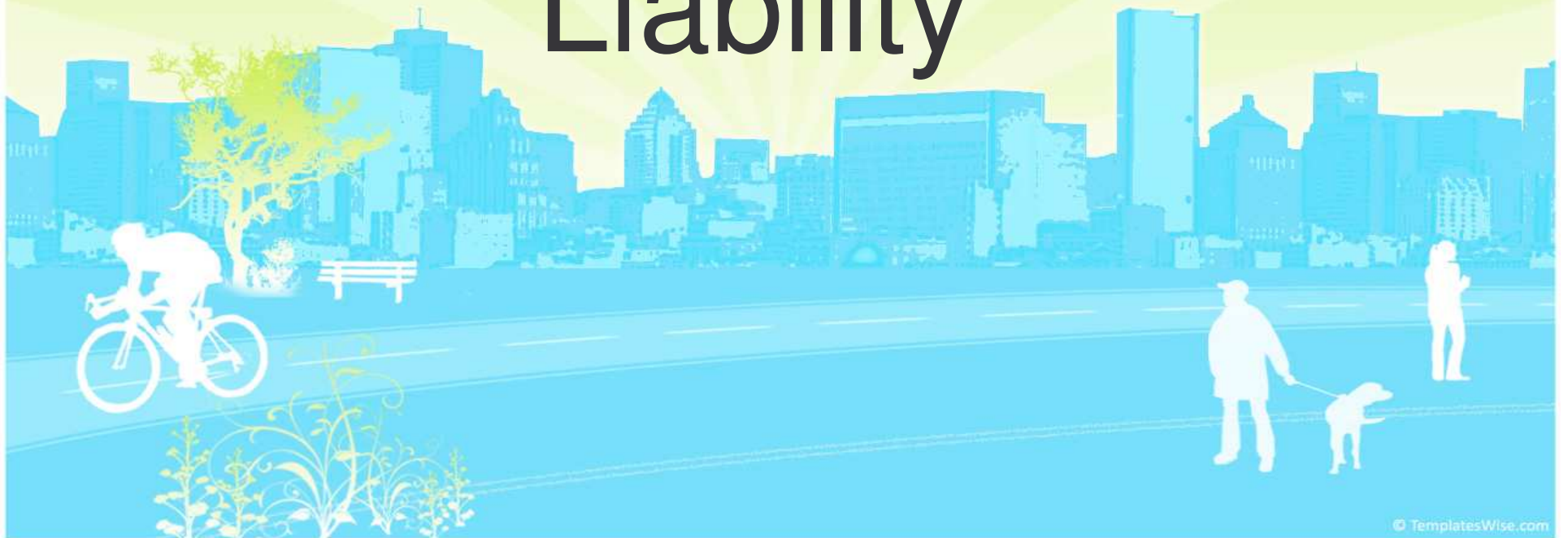


Are these legally defensible?

- Bike Lanes - ?
- 4 – 3 Lane Conversions (Road Diet) - ?
- Mid-Block Crossings - ?
- Signing Rural Bike Routes - ?



Road Agency Liability



Highway Exception:

The Highway Exception:

“...each governmental agency shall maintain the highway in reasonable repair so that it is reasonably safe and convenient for public travel.”



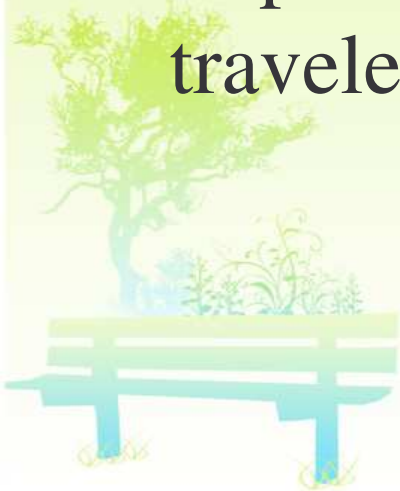
Governmental Tort Liability Act –

MCL 691.1402(1)

Highway Exception:

“The purpose of the highway exception is not ... an unrealistic duty to ensure that travel upon the highways will always be safe. ... [W]e discern that the true intent of the Legislature is to impose a duty to keep the physical portion of the traveled roadbed *in reasonable repair*.”

-Wilson v Alpena Co Rd Comm (2006)



Highway Exception:

“Repair and Maintain” only:

- **No general duty to make road “safe”**
- **Repair broken or dilapidated surface**
- **No requirement to “improve, augment or expand”**
- **Maintain what was originally built**



Nawrocki v Macomb Co Rd Comm (2000)

No liability for:

- **Design or redesign defects:**

“The plain language of the highway exception to governmental immunity provides that the road commission has a duty to repair and maintain, not a duty to design or redesign.”

*Hanson v Board of Rd Commissioners of
Mecosta County (2002)*





No liability for:

- **Lane width**
- **Shoulder width**
- **Normal cross slope**
- **Horizontal curvature**
- **Super elevation**
- **Transition area**
- **Vertical curvature**
- **Vertical clearance**
- **Stopping sight distance**
- **Bridge width**
- **Horizontal clearance**
- **Structural capacity**

No liability for:

- **Traffic signs and signals:**

“...state or county road commissions have no duty, under the highway exception, to install, maintain, repair, or improve traffic control devices, including traffic signs.”

Nawrocki v Macomb Co Rd Comm (2000)

“The highway exception does not impose a duty on municipalities to install, maintain, repair, or improve traffic signals.”



Johnson-McIntosh v City of Detroit (2006)

No liability for:

- **Street light poles:**

“...streetlight poles, like “traffic signals and signs,” are not part of the definition of “highway”...(under the highway exception).”

Weaver v Detroit (2002)

[relying on Nawrocki]



No liability for:

- **Accumulations of ice and snow**

“...the accumulation ... of ice and snow on a sidewalk, regardless of whether it accumulated through natural causes or otherwise, does not constitute a "defect" in the sidewalk”

Estate of Buckner v. City of Lansing (2008)



Liability limited to:

Vehicular travel lanes:*

“The duty ...extends only to the improved portion of the highway designed for vehicular travel and does not include sidewalks, trail ways, crosswalks, or any other installation outside of the improved portion of the highway designed for vehicular travel.”



*Applies to state and county roads only

Grimes v MDOT (2006)

Liability limited to:

- Road surface “defects”:

Maintenance conditions that “... a reasonable road commission would understand ...posed an unreasonable threat to safe public travel...”

Wilson v Alpena Co Rd Comm (2006)



Liability for road surface conditions:

- Rutting**
- Potholes**
- Manhole covers**
- Dilapidated road surface**
- Traveled (vehicle) lane edge drops**
- Missing storm sewer grates**



No liability for:

- Rough or uneven surfaces

“Nearly all highways have more or less rough and uneven places in them, over which it is unpleasant to ride; but because they have, it does not follow that they are unfit and unsafe for travel.”



Wilson v Alpena Co Rd Comm (2006)

Are these legally defensible?

- Bike Lanes - **YES**
- 4 – 3 Lane Conversions (Road Diet) - **YES**
- Mid-Block Crossings - **YES**
- Signing Rural Bike Routes - **YES**



No Agency Liability Because:

- No Design liability
- All involve signs, signals, or features outside the road bed surface
- Recognized as a reasonable measure to address a specific safety problem
- Empirical evidence it promotes safer travel



Thank You
Questions?



MDOT'S MISSION

Providing the highest quality integrated transportation service for economic benefit and improved quality of life.

